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## **Study of Policies Supporting Women Entrepreneurs**

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The purpose of this research study is drawing policy implications for supporting women entrepreneur. We analyzed the responses of women entrepreneur to technological changes, including the fourth industrial revolution. Main research methods are as follows: By analyzing the data of ‘National Survey of Businesses,’ the increase and decrease in the number of women entrepreneurs was looked into, and the changes in the types of their businesses and the proportion in small commercial and industrial businesses were identified at the same time. With a view to determine more specific characteristics of women entrepreneurs, we examined the data of ‘Female-owned Businesses.’ More than that, to find the current status of women entrepreneurs among technology-based businesses, the main concern of this study, the data of ‘Female-owned Venture Businesses’ were analyzed additionally. Since women entrepreneur usually means women who owned businesses, we analyzed the corresponding data sets. Looking at the changes in characteristics and composition during the 20 years

from 1997 to 2018, the number of women entrepreneurs has been on the increase, and their proportion in the total number of businesses also has been increasing concurrently. However, women entrepreneurs are still smaller than male-owned businesses, and concentrated in such particular industries as accommodations and restaurants. The size of the sales is found to be very petty as well. The types of businesses in which female-owned businesses have the bigger portion in sales than male-owned businesses, among the businesses with sales of 100 million won or higher, are found to be publishing, image broadcasting and communications, professional science and technology services, construction, sewage waste, electricity&#65381;gas&#65381;water supply, mining, and farming and fisheries. The pettiness of female-owned businesses is manifested by the fact that there is no industry where female-owned businesses have higher sales than male-owned businesses among businesses with sales of 500 million won or higher.

A characteristic revealed in the ‘2017 Female-owned Businesses’ is that their financial status is comparatively is sound. It is confirmed that they tend to avoid risks and manage business in a stable manner. While women entrepreneurs are found to be well aware of such government policies as financial aid, tax relief, manpower support, etc., they lacked the awareness of such government policies as export support, and business reestablishment support, etc. They think the biggest difficulties in using fund-supporting programs offered by the government are complicated documents and procedure, and the low limit in fund aid. Government policies that showed high awareness level in the ‘Female-owned businesses’ are fund and manpower aid, and tax relief, etc.

The results of analyzing the data of the investigation into actual conditions in venture businesses revealed that in terms of manpower formation or sales revenue, etc., the number of female-owned venture businesses is decreasing as in the case of male-owned venture businesses, and their business size and the

number of possessed patent rights are smaller compared to male-owned venture businesses. The venture industries mainly managed by female-owned businesses include manufacture, publishing, image broadcasting and communications, professional science and technology services, and enterprise-support services. Gender distinction is also manifested in the venture business area: in terms of industrial property rights, female-owned businesses are concentrated in design, whereas male-owned businesses are concentrated in the fields of patent, trademark rights, and overseas industrial property rights, thus the entry of female-owned industries into such fields is very rare. To the question asking them to compare their technological competency to that of the best domestic company, female-owned businesses showed no less confidence in their technological competency than male-owned businesses.

The second method was the survey using a structured questionnaire. The questionnaires get into the response to the fourth industrial revolution and required policies with 213 female-owned businesses. Main types of businesses that were the subjects of the survey were ‘business facility management,’ ‘business support and rental services,’ ‘professional science and technology services,’ ‘information communication,’ and those manufacturing businesses. Those industries are related to technology adoption.

The total assets, liabilities, average total capital, the average annual sales, and the average annual operating profit were all considerably petty. Those businesses that are focused on domestic sales. The subjects in manufacturing businesses showed a large proportion in sales to consumers, while the subjects in non-manufacturing industries in sales to the government. This seems to be the effect of government policies giving affirmative action treatment to female-owned businesses on their sales to the government. Diversification in sales structure also appeared with growing business stages.

In 2017, the amount of their average domestic facility investments was 599.6 million won, that of average domestic R&D investment 49.6 million won, that

of average overseas investment 27.3 million won, and that in other uses 6.3 million won. The average total amount of investment by sector was 682.7 million won. A notable characteristic is that while the investment by growing businesses was absolutely high and the amount of facility investment was not low, the amount of investment in R&D and that of overseas investment were also rather high. The size of businesses from the perspective of manpower status is also in a very petty level. The total average workforce was 13.3 persons. The characteristics revealed in their manpower include the fact that the size of manpower is rather bigger in non-manufacturing businesses than in manufacturing businesses, and the size grows bigger with growing stages of business.

As to the technological level of businesses that responded to the survey, high technology accounted for a meager 14.1%, intermediate technology 38.0%, and general purpose technology 47.9%. The number of answers that they are not prepared for or responding to the 4th industrial revolution made up 68.1% of the total respondents. We asked the questions concerning the preparation related to the fourth industrial revolution in several aspects. A high rate of 78.9% of respondents answered that they have difficulty in financing, followed by 73.2% who answered that they have difficulty in securing workforce and its practical use. The rate of the subjects who had difficulties in R&D was 69.6% and that of those in sales, 59.6%. What needs to be noticed is the high rate of answers that they have more difficulties since they are female-owned businesses, and that answer was mentioned more among the subjects who were better prepared for the fourth industrial revolution, etc.

Regarding the difficulties experienced in different growth stages, securing capital, finding a market, marketing, etc. were cited as the biggest difficulty in the entry stage, whereas financing, securing workforce, pay rise, etc. were as that in the growth stage. We asked if they had the experience of receiving government support during the past three years by each government support

item. While the most experienced support is loan and credit guarantee, the rate of experiencing support in terms of technology or technological manpower is revealed to be very low in comparison. As to the kinds of support respondents were highly willing to receive henceforth, loan guarantee support was mentioned by 55.4%, followed by fund aid for R&D by 52.1%, and support for market exploitation by 50.2%. In regard to the willingness to participate in policies prepared for female-owned businesses, the rate of those willing to participate in the venture fund exclusively offered to female-owned businesses is 67.1%, that in R&D fund aid exclusively offered to women, 78.9%, that in the special guarantee program exclusively offered to female-owned businesses at the time of technology guarantee, 79.8%. Given that a considerable number of businesses fail to receive support due to the length of time required or unprepared conditions, etc., difficulties faced in actual spots need to be closely examined to enhance utilization of relevant policies.